

**Newton Trailers Limited with Kind Permission of Fruehauf Trailers  
Presents Their Operation & Maintenance Manual**

**All operators of Fruehauf Tipping Trailers are expected to have read  
and understood this manual and be operating the trailer in  
accordance with these instructions.**



**FRUEHAUF**  
Legendary Excellence

**Operation  
& Maintenance  
Manual**



# Weighing

Some Trailers are equipped with a Fruehauf™ on-board weighing system.

The weighing equipment is set to “ZERO” at the factory but **must** be calibrated at “SPAN” when fully loaded. Until that time it will only show an approximate indication which should be treated with caution.



*Do not operate a vehicle unless the weighing system has been correctly calibrated.*

Complete the procedure on the following pages to correctly calibrate the weighing system and prepare it for first use.



## SPAN Calibration

Ensure the vehicle is on Flat even ground.

Load the body with a known test load.

Raise the Body to the "Weighing " height. This should be raised approximately 300mm (12").

Turn on the Weigher by pressing button [3] "ON" once, or flashing sidelights.

Press and hold button [3] "ENTER" until **SEtUP** appears in the display.

Press button [6] "DOWN" until **SPAn** is displayed.

Press button [5] "EDIT" and use the arrow buttons [5,6,7] to enter a value for the test load. This will be shown in the display.

Press button [3] "ENTER", the display will show **SU-rEP** , press button [3] "ENTER" again to commence span calibration.

The display will show **Good** , if it does not repeat the above procedure.

Make a note of the Zero and Span calibration figures.

With **ZE-roFCt** displayed, press button [5] "EDIT" and note the zero factor.

Press button [4] "CANCEL" then button [6] "DOWN" to display **CALFACT**

Press button [5] "EDIT" and note down the displayed span calibration factor.

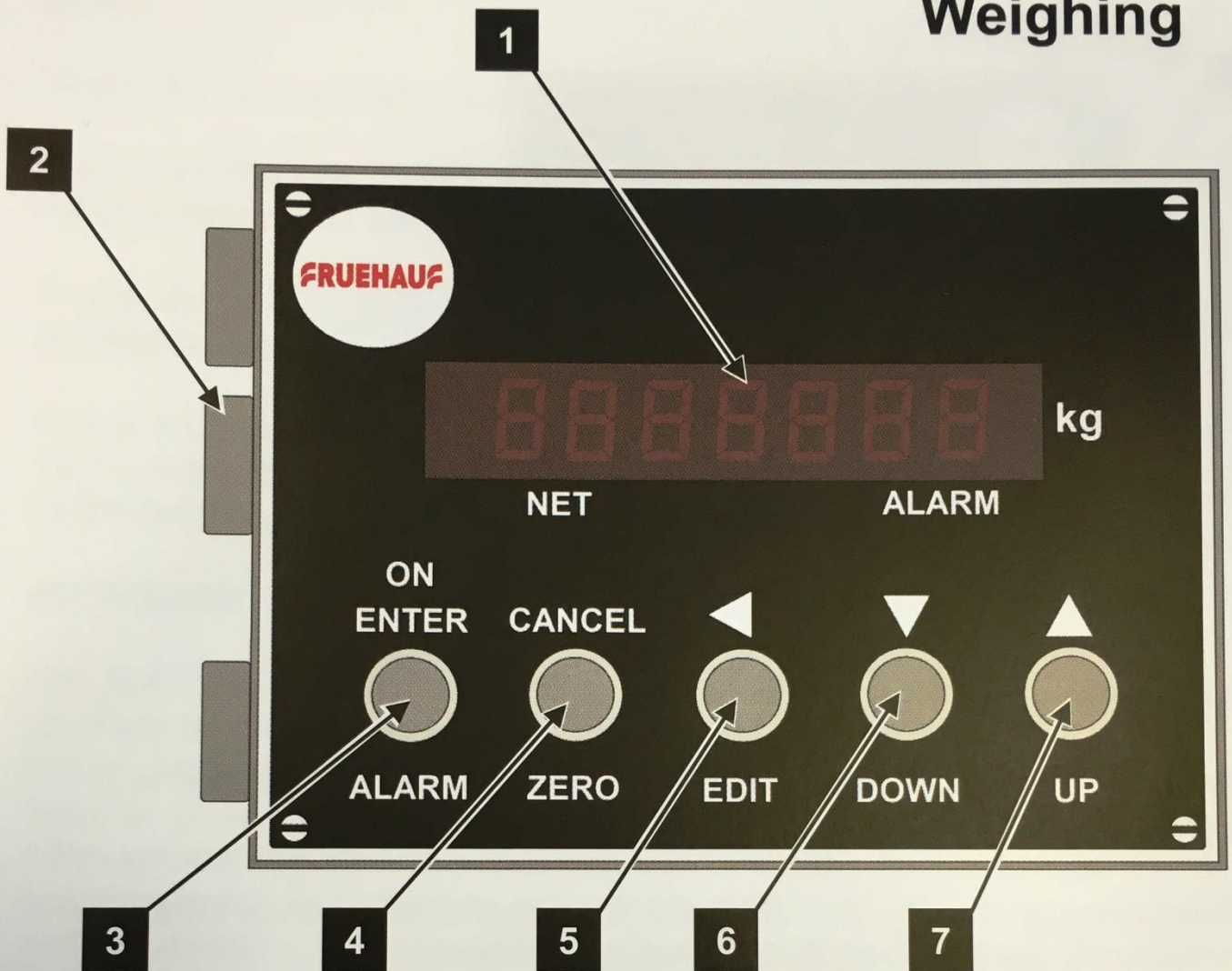
Press button [4] "CANCEL"

Press button [6] "DOWN" until **SEtUP** appears in the display.

Press button [3] "ENTER", the display will show NET weighing.



# Weighing

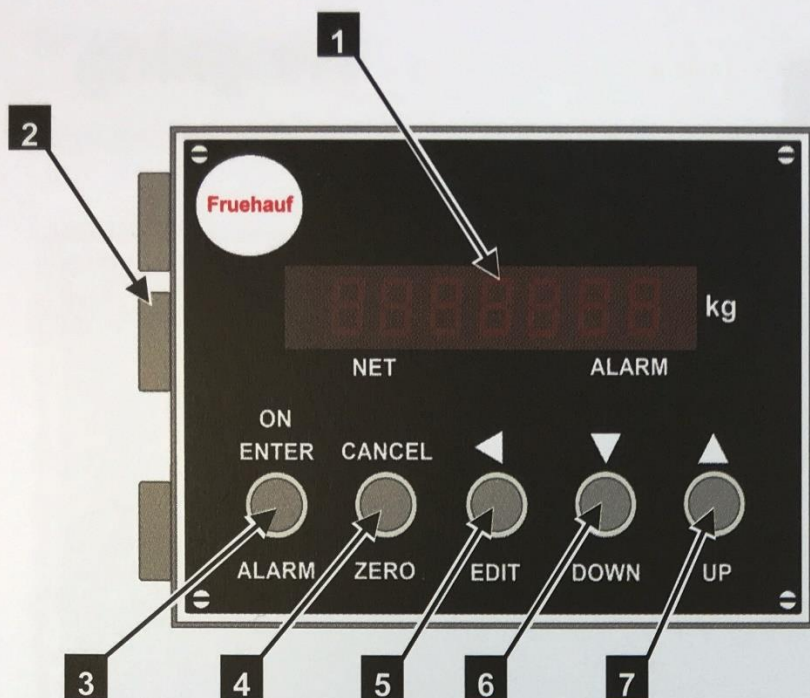


- 1 LED Display Panel
- 2 Electrical Connections
- 3 Push Button "ON", "ENTER" & "ALARM"
- 4 Push Button "CANCEL" & "ZERO"
- 5 Push Button "EDIT"
- 6 Push Button "DOWN"
- 7 Push Button "UP"



*It should not be necessary to recalibrate either Zero or Span, and excessive recalibration should be avoided unless and until a definite trend towards consistent Heavy or Light weighing is identified. Excessive recalibration can result in poor repeatability.*





## ALARM

The alarm can be selected to sound when the Maximum payload is exceeded.

Short press button [3] "ENTER", this toggles the alarm on or off and is indicated in the Display [1] above the word Alarm.

## CHANGING THE ALARM SETPOINT

Press button [6] "DOWN" to display for example **A 25000** (the current alarm setting).

Press button [5] "EDIT", and use the arrow buttons [5,6,7] to enter a value for the Set point. This will be shown in the display.

Press button [3] "ENTER" to store the new value. (Press button [4] "CANCEL" to restore the original value.

Press button [6] "DOWN" to return to NET weighing.



*In Alarm setting mode the display will automatically revert to NET weight if no buttons are pressed for 30 Secs. If you do not press ENTER after the sequence the previous alarm value will be restored.*

# newton trailers



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Contact [parts@newtontrailers.com](mailto:parts@newtontrailers.com) for a full parts manual for your trailer.

Below is an example page from our online parts shop.

26. Fruehauf OnBoard Weighing System Spare Parts

| Manufacturer            | Part No. | Description  | Price   |
|-------------------------|----------|--|---------|
| Fruehauf                | N1003787 | Fruehauf Onboard Weigher Side Mount Indicator Display Head                 | £577.30 |
| Fruehauf                | N1003804 | Fruehauf OnBoard Bluetooth Remote Handheld Device Charging Lead            | £18.77  |
| Fruehauf                | N1003803 | Fruehauf OnBoard Bluetooth Weigher Remote Handheld Device With Charger     | £180.00 |
| MX OnBoard              | N1002022 | MX & Fruehauf Weigher Side Mount Plastic Box 280 x 190 x 130 Including lid | £84.33  |
| Newton Trailers Limited | N1003805 | Fruehauf MX Analogue Load Cell Replacement                                 | £188.70 |
| PM OnBoard              | N1003943 | Weld On Block For Load Cell Mounting WELDING BLOCK PM30866                 | £17.29  |



## ZERO

# Weighing

This is the manual zero function.

Pressing button [4] "ZERO" for 1 second, zeros the display, providing the weight displayed is within 1000kg of the original calibrated zero.

If auto zero (**AZEro 1**), zeroing takes place automatically on power up (sidelights flashed).

This is **NOT** zero calibration which should be a "once only" operation. This function compensates for zero drifts from the original calibration due to dirt build up, body wear, site level and other external factors.

## AUTOZERO

The Auto zero function attempts a zero net weight display on powering up when the body is empty. This is similar to pressing the "ZERO" button, and means a zero value can be forced without opening the weigher cover by simply flashing the sidelights.

Although manual zero allows a range of +/-1000kg from originally calibrated zero, auto zeroing only allows +/- 200 kg from the previous zero. In addition, it is only attempted between 20 and 30 secs after switching on (sidelight flash). It will fail if the body isn't stable or is in motion, or if displaying more than 200kg.

This feature is off by default but can be changed.

Press and hold button [3] "ENTER" until **SEtUP** appears in the display

Press button [6] "DOWN" until **AZEro0** or **AZEro 1** is displayed.

Press button [5] "EDIT", and use the arrow buttons [5] "DOWN" to toggle the display to **0** for disabled or **1** for enabled.

Press button [3] "ENTER"

Press button [7] "UP" until **SEtUP** appears in the display.

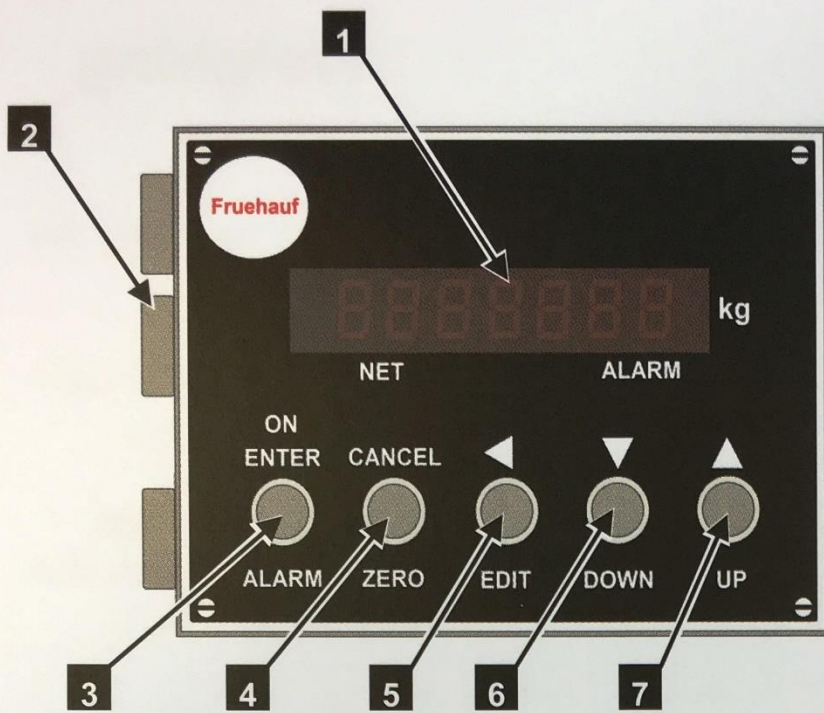
Press button [3] "ENTER", the display will show NET weighing.



*If the weigher is inadvertently turned on (sidelights flashed) before the body is raised into the weighing position, an incorrect zero weight will be acquired. This will affect the displayed loaded weight.*

*Always ensure a "Good" zero is displayed before loading.*





## OVERVIEW OF SETUP MENU & SYSTEM CALIBRATION

To access Setup mode press and hold button [3] "ENTER" for 1 second.

Whilst in Setup pressing the arrow buttons [5,6,7] navigates through the various parameters, whilst pressing button [5] "EDIT" allows editing of certain values in the display.. EDIT mode is signified by a flashing digit. The digit to be modified can be moved by pressing button [5] and the value changed by pressing buttons [6] & [7].

After modification the new value is accepted by pressing button [3] "ENTER".

**SEtUP** This is the entry and exit point of the menu. Pressing buttons [3,4 and 5] will return the display to NET weighing. Buttons [6 & 7] navigate to menu parameters.

**AZEro 1** Auto zero enabled. The Auto zero function attempts a zero net weight display on powering up when the body is empty. This is similar to pressing the "ZERO" button, and means a zero value can be forced without opening the weigher cover by simply flashing the sidelights.

**AZEro 0** Auto zero disabled.

**CoUNtby** The weigher counts by 20KG steps. This can be changed to 10, 20, 50, 100, 200 or 500kg steps.



# Weighing

**ZERO**

This is for initial zero calibration only. It should not be repeated unless there is clear evidence of a permanent zero (empty body) weight shift, or parts of the system have been replaced.

**SPAN**

This is for initial span (full weight) calibration and should not be repeated unless there is clear evidence of a repeatable weighing error or weigher parts have been replaced. Load the trailer with a known weight, or fill and use a weighbridge to determine net weight. (ideally near max gross weight). Ensure the body is raised to the weighing position. Press button [5] "EDIT" and edit in the payload shown using buttons. [5,6 & 7]  
Press button [3] "ENTER" to start SPAN acquisition. Press button [4] "CANCEL" to abort.

**CAL**

This is displayed with a flashing "o" "Good" is displayed on successful completion. (An error code is displayed if it fails) The display returns to **SPAN**. Make a note of the new calibration factor as displayed in **CALFACT** described below.

**ZEROFACT**

Pressing button [5] "EDIT" displays the zero (empty) calibration factor used internally.

**CALFACT**

Pressing button [5] "EDIT" displays the span (Full load) calibration factor used internally.

**BLUETOOTH**

This parameter is used to display the unique Bluetooth™ address of the currently connected remote display device (if option supplied) The address is 7 digits which may be alpha numeric.

It is set to **0000000** if the Bluetooth™ option is unused (default) If it is edited to **0000001**, a new remote device will be searched for on return to normal weighing. See Bluetooth Remote device.

**CELL OP**

This is used to display the load cell input in Millivolts per volt (mV/V). It is useful for troubleshooting. Press button [3] to display (the flashing bars in the left digit indicate mV/V mode). An empty standard Bathtub body gives a cell output of 0.04 & 0.08 mV/V. A 30t load gives around 0.65 mV/V.



# BLUETOOTH™ RADIO REMOTE CAB DISPLAY OPTION

## Introduction

This option allows remote display of weight on a battery powered portable module (the 'Remote'). It is a simple duplicate display of the NET weight shown on the normal chassis indicator, and has no control buttons.

## Operation

The remote is switched on by pressing the power button on the left hand side panel. This button requires a press of at least half a second to switch the unit on.

This is to prevent accidental powering on with consequent battery drain. (If the button is held depressed, it enters a diagnostic mode (see 'Troubleshooting', below).

The display will initially show the message **SIGNAL?**, indicating no radio link established with the base. If the link remains down, the **SIGNAL?** message is replaced with two flashing decimal points (DPs) to conserve battery power, whilst still indicating the remote is powered up.

If the base (on the Trailer) is now switched on (press a button or flash trailer side lights), the Bluetooth radio link will be established after a few seconds and the net weight will be displayed on the remote.

Switching off is by pressing the power button on the remote a second time.

The remote will automatically switch itself off after 5 minutes without a signal from the base. It will also switch off if its internal battery voltage drops below a safe limit '**LOW BATT**' will be displayed.

It is a good idea to switch on the remote around the same time as the base is powered on (sidelights flashed). If the base is turned on more than 30 seconds before the remote, it will attempt to search for a 'new' remote (as described below), and this may result in a longer wait for initial connection.



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**Below is an example page from our online parts shop.**

### Fruehauf OnBoard Bluetooth Weigher Remote Handheld Device With Charger

Newton Part No.: N1003803  
Condition: New, Branded  
Stock Available: 19  
Postage: 1kg  
Price: **£180**  
+VAT  
Quantity:



**Description:**  
Fruehauf OnBoard Bluetooth Weigher Remote Handheld Device With Charger

This is the handheld bluetooth remote unit which works together with the Fruehauf Indicator. It also works with the MX On Board Indicator (as long as the indicator is bluetooth enabled)



PDF Datasheet PDF Datasheet

#### Related Items



Fruehauf OnBoard Bluetooth Remote Handheld Device Charging Lead



Fruehauf Weigher Side Mount Indicator Display Head With Metal & Plastic Boxes



MX & Fruehauf Weigher Side Mount Plastic Box Only  
280 x 190 x 100



# Weighing

## Swapping Remotes

Only one remote may 'talk' with one base at any one time. When the base powers up, it will try to link with the remote it was previously talking to. If that remote is in range and switched on, a link is made in seconds, and weight data is transmitted and displayed.

If the previous remote is not found within 30 seconds, a search ('discover') for any Fruehauf remote is initiated. The first one found is used to form a new link.

Around 40 seconds after switch-on, a brief display of `d 15C n` is made, where 'N' is the number of Bluetooth devices discovered (this will include any Bluetooth – even a mobile phone).

The search then continues to find only a Fruehauf remote device. If a new remote cannot be detected after a further 30 seconds, the cycle is stopped and connection with the original remote is attempted continuously.

Note that once a successful link has been made, the search cycle is not re-started. If the link is temporarily lost, the base will only try to re-connect with the current remote. To initiate a search, the base must be turned off and on again.

## Linking with a new remote

Power up the base with the 'new' remote nearby, and switched on. A search is started, as described above, as soon as the 'old' remote isn't detected. This will take around a minute, with no indication of progress until the remote starts to show net weight.

Note that the remote may power itself down after five minutes from first switching it on if a link isn't established. If the 'new' remote is not discovered within around 1 minute, switch the base off then on to re-initiate a search. Alternatively, enter `SETUP > BLUETOOTH` and set the address to `000000 !`, to initiate a continuous search for the new remote.



## **BLUETOOTH™ RADIO REMOTE CAB DISPLAY OPTION contd.**

### **Battery Charging**

The remote's internal rechargeable battery is 'trickle-charged' from the vehicle's lighter socket, using the supplied charging lead.

The battery cannot be harmed by overcharging.

The LED indicator next to the remote's charging socket will illuminate whenever charging is taking place. The remote is designed to be left connected to the charging socket at all times when it is not in use.

The current draw from the vehicle battery will not flatten it if left connected overnight, or longer.

The lighter socket can be 12 or 24v supply. If the remote's battery becomes completely discharged, it may take several hours of charging before it can be used. If it turns off prematurely, suspect a flat battery. After use, or when first plugged in, the first hour is at a boosted charge rate, indicated by the LED flashing on/off, slowly.

### **Range**

The Fruehauf system uses powerful Class 1 Bluetooth modules with a specified range up to 100m. This maximum is greatly affected by terrain and obstructions such as other vehicles and buildings; the signals are not able to penetrate most solid materials. The signals are, however, easily reflected and this is one way they achieve good penetration into the cab; they pass through the windows after reflection around the trailer chassis and even off the ground.

The range should be close to maximum in 'line-of-sight' from the offside of the vehicle, but will obviously reduce, and even disappear altogether if a large object comes between base and remote.

When establishing a link after switch on, a maximum distance of around 10 metres between base and remote should be observed.

### **Troubleshooting**

When there is no link with a base, the display will show **SIGNAL?** for two seconds. It then drops back to a power saving mode of two decimal points on the display 'togglng' on and off.



# Weighing

If the remote remains in this mode for more than two minutes with an operational base nearby, it is likely that the base is either already connected to another remote, has Bluetooth mode disabled, is not Bluetooth equipped, is out of range, or there is something interfering with the radio signal between base and remote.

Ensure the base is known to be Bluetooth equipped and move the remote close by and power both off and on again\*.

If this still fails to initiate a link after a couple of minutes, enter **SETUP** > **BLUETOOTH** on the base, and check for a valid Bluetooth address (a 7-digit number above 0000004 that may include some letters).

If the address is set to '0000000', Bluetooth has been disabled. Set '0000001' to initiate a search when the base is returned to normal weighing.

If there is a Bluetooth address in the base (indicated by 7 numbers and/or letters), see if it corresponds with that in the remote.

Press and hold the remote's power button to force the diagnostic mode – it will show the current software release, then perform a display segment test, then display a 7-digit address which should be the same as the one displayed in the Base's **BLUETOOTH** parameter.

(If the remote shows a blank address, keep the power button pressed until **INITIAL** is displayed – then try the diagnostic step again.)

If all of the above checks out, it may be a radio signal propagation problem. Perhaps the base and remote are too far apart, a large object is blocking the signal path, or strong external radio interference is present. This may happen if parked near a radio transmitting antenna or source of strong electrical interference, such as welding or large electric motors/control gear.

It is possible, but fairly unlikely, that a mobile phone, CB or 'walkie-talkie' could be sufficient to temporarily upset the Bluetooth link.

\*If the site is one where the driver is not permitted to leave the cab, try holding the remote out of the window, in 'view' of the base on the chassis until a successful link is achieved. It should then be possible to bring the remote back inside and still maintain the link.



## BLUETOOTH™ RADIO REMOTE CAB DISPLAY OPTION contd.

### Remote Diagnostic Function

The remote has a diagnostic function in which, if the power button is held pressed when switching on, the display will step through a series of self tests.

These are:

- a. Display firmware (internal software programme) version number – e.g. **DF6-309** .
- b. Perform a sequence of segment tests.
- c. Display Bluetooth address lower 7 digits (as used by the base in the **BLUETOOTH** parameter).
- d. Display Bluetooth address upper 5 digits (giving a full 12-digit address).
- e. Force a re-initialisation of the Bluetooth module – **INITIAL**.

Note that if the module was not previously initialised, steps c. and d. above will show blanks. After step “e”, the address should show properly when the sequence is repeated. A reported Bluetooth address is a good indication the Bluetooth module is working correctly.